

# Download File PDF Solution Manual For Fluid Mechanics Chemical Engineers

#Jenny



Finally I get this ebook, thanks for all these I can get now!

#Rio



Cool! I'am really happy

#Markus Jensen



I did not think that this would work, my best friend showed me this website, and it does! I get my most wanted eBook

#Hun Tsu



wtf this great ebook for free?!

#Che Salsa



My friends are so mad that they do not know how I have all the high quality ebook which they do not!

#Diego Butler



so many fake sites. this is the first one which worked! Many thanks

Fluid Mechanics For Chemical Engineers, Third Edition  
Noel de Nevers  
Solutions Manual

Chapter 1 An \* on a problem number means that the answer is given in Appendix D of the book.

1.1 Layers Used, Newton's laws of motion, conservation of mass, first and second laws of thermodynamics. Lenz Six Used, third law of thermodynamics, all electronic and magnetic laws, all laws discussing the behavior of matter at the atomic or subatomic level, all relativistic laws.

1.2 By ideal gas law, for uranium hexafluoride

$$\rho = \frac{PM}{RT} = \frac{(1 \text{ atm}) \left( \frac{352 \text{ g}}{\text{mol}} \right)}{(0.082 \frac{\text{L atm}}{\text{mol K}}) (56.2 + 273.15 \text{ K})} = 0.0130 \frac{\text{g}}{\text{cm}^3} = 0.0130 \frac{\text{lbm}}{\text{ft}^3}$$

Here the high density results from the high molecular weight.

At its normal boiling point, 4 K, by ideal gas law helium has

$$\rho = \frac{PM}{RT} = \frac{1 \text{ atm}}{(0.082 \text{ L atm})} = 0.012 \frac{\text{g}}{\text{cm}^3} = 0.76 \frac{\text{lbm}}{\text{ft}^3}$$

Here the high density results from the very low absolute temperature. The densities of other liquids with low values are: liquid methane at its sbp, 0.42 g/cm<sup>3</sup>; acetylene at its sbp, 0.62; ethylene at its sbp, 0.57.

Discussion: the point of this problem is for the students to recognize that one of the principal differences between liquids and gases is the large difference in density. As a rule of thumb, the density of liquids is 1000 times that of gases.

1.3\*

$$\rho = \sum \text{mass} / \sum \text{volume} \quad \text{For } 100 \text{ lbm}$$
$$\rho = 100 \text{ lbm} / \left( \frac{50 \text{ lbm}}{4.49 \times 62.3 \text{ lbm/ft}^3} + \frac{50 \text{ lbm}}{62.3 \text{ lbm/ft}^3} \right) = 102 \frac{\text{lbm}}{\text{ft}^3}$$

Solution, Fluid Mechanics for Chemical Engineers, Third Edition, Chapter 1, page 1

[Download PDF version of :](#)  
**Solution Manual For Fluid Mechanics Chemical Engineers**